Amendments to the abstract:

Please amend the abstract as follows:

~~The present invention concerns a~~<u>A</u> computer ~~which~~ determines a subsequent state of a steel volume, based on an instantaneous initial state of [[said]]<u>the</u> steel volume and at least one volumetric surface, the temporary influence quantities acting on [[said]]<u>the</u> steel volume, by resolution of an equation of thermal condition and phase change. The states include for at least one volumetric element of the steel volume, a local distribution in concentration of a<u>n</u> alloy element mobile in the steel, the local proportions of the modeled phases of the steel and a quantity describing a local energy content of the steel. The phases ~~comprise~~<u>include</u> austenite and another phase, generally, ferrite or cementite. In the context of [[the]]<u>a</u> change equation, the concentration levels of the mobile alloy element, which are located on either side of the phase boundary, between the austenite and the other phase are determined by resolution of [[the]]<u>a</u> ~~Stephan~~<u>Stefan</u> problem.

A clean copy of the abstract that incorporates the above amendments is provided on the following separate page.

ABSTRACT

A computer determines a subsequent state of a steel volume, based on an instantaneous initial state of the steel volume and at least one volumetric surface, the temporary influence quantities acting on the steel volume, by resolution of an equation of thermal condition and phase change. The states include for at least one volumetric element of the steel volume, a local distribution in concentration of an alloy element mobile in the steel, the local proportions of the modeled phases of the steel and a quantity describing a local energy content of the steel. The phases include austenite and another phase, generally, ferrite or cementite. In the context of a change equation, the concentration levels of the mobile alloy element, which are located on either side of the phase boundary, between the austenite and the other phase are determined by resolution of a Stefan problem.